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CLAIMS:

1. Method of operating an internal-combustion engine (1) which has first cylinders (2 to 6) and at least one second cylinder (7), the second cylinder (7) serving as an input cylinder, in that a portion of the exhaust gas is fed by way of an exhaust gas recirculating system (14) to the carbureted fuel, and having an injection system for injecting fuel into the first cylinders (2 to 6) and the second cylinder (7) of the internal combustion engine (1), characterized in that the controlling of the injected fuel quantity of the second cylinder (7) takes place independently of the controlling of the injected fuel quantity of the first cylinders (2 to 6).

2. Method according to Claim 1, characterized in that the injection start and/or the injection duration of the fuel injection for the first cylinders (2 to 6) and the second cylinder (7) are adjusted independently of one another.

3. Method according to Claims 1 or 2, characterized in that, for raising the partial oxygen pressure of the carbureted fuel fed to the first cylinders (2 to 6), the fuel quantity is reduced which is injected into the second cylinder (7).

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4. Method according to Claim 2, characterized in that, together with the reduction of the fuel quantity injected into the second cylinder (7), the fuel quantity is raised which is injected into the first cylinders (2 to 6).

5. Method according to Claim 1 or 2, characterized in that, for lowering the partial oxygen pressure of the carbureted fuel fed to the first cylinders (2 to 6), the fuel quantity is increased which is injected into the second cylinder (7).

6. Method according to Claim 5, characterized in that, together with the increasing of the fuel amount injected into the second cylinder (7), the start of the injection of the fuel amount into the second cylinder is shifted to late.

7. Method according to one of Claims 1 to 6, characterized in that, during acceleration operations of the internal-combustion engine, the fuel amount injected into the second cylinder (7) is reduced or the injection of fuel into the second cylinder 7 is switched off completely.

8. Method according to one of Claims 1 to 7,

characterized in that the fuel injection of the second cylinder (7) is switched off in the idling operation of the internal-combustion engine (1).

9. Method according to one of Claims 3 to 8, characterized in that the controlling of the partial oxygen pressure of the carbureted gas fed to the first cylinders (2 to 6) takes place as a function of one or several of the values cylinder pressure, concentration of exhaust gas constituents, particularly NOx, HC, CO, exhaust gas temperature, engine torque, fuel usage, supercharging pressure, rotational engine speed, in the characteristic diagram of the internal-combustion engine operation.

10. Method according to one of Claims 1 to 9, characterized in that the injection of the fuel takes place by means of a common rail injection system which has a common preliminary storage device (17) for storing highly pressurized fuel and fuel injectors (22) connected with the common preliminary storage device (17) by way of injection lines (21), for injecting fuel into the cylinders (2 to 7) of the internal-combustion engine (1) and a control unit (23) for controlling the fuel quantity fed to the cylinders (2 to 7) for the injection, the controlling of the injection of the fuel quantity fed to the second cylinder (7) being carried out by the control unit (23)

independently of the injection of the fuel quantity fed to the first cylinders (2 to 6).

11. Method according to one of Claims 1 to 9, characterized in that the injection of the fuel takes place by means of a common rail injection system which, for each fuel injector (22), has an individual storage device (28) for storing highly pressurized fuel, the individual storage device (28) is connected by way of a distributor line (26) with a common supply line (27), and has a control unit (23) for controlling the fuel quantity fed to the cylinders (2 to 7) for the injection, the controlling of the injection of the fuel quantity fed to the second cylinder (7) by the control unit (23) taking place independently of the injection of the fuel quantity fed to the first cylinders (2 to 6).

12. Internal-combustion engine (1) which has first cylinders (2 to 6) and at least one second cylinder (7), which second cylinder (7) is used as an input cylinder in that a portion of the exhaust gas is fed to the carbureted gas by way of an exhaust gas recirculating system (14), characterized in that an injection system is provided for injecting fuel into the first cylinders (2 to 6) and into the second cylinder (7) of the internal-combustion engine, the injection system permitting a mutually independent controlling

of the injected fuel quantity of the first cylinders (2 to 6) and of the second cylinder (7).

13. Internal-combustion engine according to Claim 12, characterized in that the injection system of the internal-combustion engine is constructed as a common rail injection system, which has a common preliminary storage device (17) for storing highly pressurized fuel, and fuel injectors (22) connected by way of injection lines (21) with the common preliminary storage device (17), for injecting the fuel into the cylinders of the internal-combustion engine, as well as a control unit (23) for controlling the injection of the fuel quantity fed to the cylinders (2 to 7), the control unit (23) being constructed for controlling the injection of the fuel quantity fed to the second cylinder (7) independently of the injection of the fuel quantity fed to the first cylinders (2 to 6).

14. Internal-combustion engine (1) according to Claim 12, characterized in that the injection system consists of fuel injectors (22), individual storage devices (28) for storing highly pressurized fuel, distributor lines (26) and a common supply line (27) and a control unit (23), an individual storage device (28) is assigned to each fuel injector (22), the individual storage device (28) is connected by way of the distributor line (26) with the common supply line (27), and the control unit (23) is constructed such that a controlling of the

injection of the fuel quantity fed to the second cylinder (7) takes place independently of the injection of the fuel quantity fed to the first cylinders (2 to 6).

15. Internal-combustion engine according to Claim 12, 13 or 14, characterized in that, for controlling the injection of the fuel quantity injected into the second cylinder (7) and/or the injection of the fuel quantity injected into the first cylinders (2 to 6), one or several sensors are provided which, for feeding their output signals are coupled with the control unit (36), such as a pressure sensor in the cylinder, a gas concentration sensor for exhaust gas constituents, a temperature sensor in the exhaust gas pipe train, a torque sensor, a fuel flow rate sensor, a pressure sensor for the supercharging pressure, a rotational speed sensor on the crankshaft.

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Translation of Figures

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